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DEPARTMENT OF THE INTERIOR,
UNITED STATES RECLAMATION SERVICE,
Washington, D. C., March 10, 1915.

To Members of Interstate Irrigation Commission:

As the result of correspondence and discussion with members of the Interstate Irrigation Commission and others interested in irrigation development, I have brought together a number of suggestions originating from various sources. I am sending herewith a copy of this material with request that you look it over and give me any constructive criticism which may occur to you with a view to correcting any errors or supplying omissions.

It is necessary that there be more or less definite agreement upon some of these elementary facts, so that when the members of the Commission assemble they will be better prepared to get down to the real business of the meeting and not lose time in the discussion of these somewhat elementary facts.

Very truly,

F. H. NEWELL.

IRRIGATION REVIVAL.

General conditions.—How can we arouse interest and stimulate further effort in the development of the West by means of irrigation? This is a question not merely for the irrigators but even more so for the manufacturing and transportation interests of the whole country who find in the West one of their best opportunities. Because of the existing stagnation in irrigation development, millions of dollars invested in partly completed large works are lying dormant or are being dissipated. Even greater indirect losses are occurring because of the deprivation to the community of the value of the food supply which should be produced if these works were completed.

It must not be supposed that because these new works are not being finished and others are not undertaken, that there is corresponding stagnation under the older finished irrigation systems. This is not the case. Wherever adequate water has been provided and other conditions are favorable, the irrigated area is steadily increasing and the aggregate crop return is steadily mounting. The most prosperous part of the country, taking everything into consideration, is that portion where the experienced irrigators are producing and marketing their crops. In spite of this fact, however, the extension of irrigation systems to new areas has practically ceased and capital is no longer available for new works.

Irrigation development can be revived in the same way, and only in the same way, that any other business can be built up; that is, by showing that it pays; that the money invested will come back with profit and interest. When this can be done there will be little cause for debate or complaint of delay in finishing the partly completed works or starting new systems. Until convincing proof to this effect is available there is little hope of substantial improvement. As long as millions of dollars in irrigation securities are looked upon with bitter regret by the thousands of persons holding them and who are scattered throughout the country, there is little use of attempting to interest them or their friends in new schemes unless it can be shown that they rest on an entirely different basis and represent real values and not mere hopes. In other words, the first move in irrigation rejuvenescence is to establish the fact that irrigation investments pay, and, more than this, that they pay in such a way that the investor will receive promptly the interest and profit on his money. If the investor is the State or Nation, it may be sufficient to show not a direct gain, but that a substantial profit is had in added population and general prosperity.

The problem of irrigation is really three-fold, and may be considered under the heads of—

First. More money—how to get funds to complete the works already begun or to start new works.

Second. More settlers—how to get more skilled farmers to use the irrigated lands now partly cultivated.

Third. Better farming methods, better crops, and markets—what are the most profitable crops to raise and how to handle these so as to obtain the most remunerative return.

As previously stated, if we can get more settlers to fully utilize the land they in turn can obtain better crops and market these to better advantage. They will be able not only to support their families but to make liberal payments and in turn it will be relatively easy to secure more money for new projects. Thus from one standpoint what we need immediately is not to worry about more construction until we have more completely utilized the resources at hand. On the other side, however, it is urged that now is the time to consider the revival of interest in new works because of the long time required to get anything of this kind in going condition.

Throughout the arid West, there are scores of irrigation projects, in which considerable investments have been made and which if completed would add materially to the State and National resources by providing opportunities for homes for citizens and by furnishing the needed foodstuff. These projects if meritorious should be revived and the millions of dollars already invested by men who have hoped to make large profits should be saved in part at least before they are gradually dissipated through the deterioration of partly completed and unused works. One of the great questions before the West, and before the Nation, is the renewal of work on these important projects.

Before money can be procured and new work started we must make plain the reasons of the present stagnation and, if possible, remove the causes. These reasons have been given for one project or another as being bad financiering, reckless engineering, imperfect water supply, and a multitude of other causes each one of which may be true for some particular case. The real cause of stagnation, however, lies further back and is summed up in the one question, Does it pay?

Does irrigation pay?—It seems almost absurd at this date, when hundreds of millions of dollars have been invested in irrigation works and scores of millions of dollars of products are raised by irrigation, to ask whether it pays. Everyone knows that it does, and yet what everyone thinks he knows may not be wholly true. Some irrigation works have undoubtedly paid and their examples may be cited to prove that others should pay, but it is beginning to be suspected that the projects which are now stagnant and upon which great losses

have resulted are in this condition because somehow or other the investors of the country, both big and little, have become convinced that so far as they are concerned irrigation does not and can not be made to pay. If we can convince them to the contrary, there is ample money available for renewing work; if we can not, then we should plainly recognize the fact and do the next best thing.

While every irrigation project may not pay the investor in the sense of yielding him a profit and interest on his investment, yet it may pay the State or Nation to directly or indirectly subsidize the work and to encourage further development either by using public funds or by furnishing some form of support. The indirect gain to the whole community is so great that few men will question the propriety of the public incurring some expense in this direction. To put the matter in another form, an investment of a million dollars may not come back unimpaired and with interest to the investor, but it may create other values enjoyed by the entire community to the extent of several millions of dollars. This is not a fanciful idea, as instances can be shown where irrigation works have never returned anything in the way of interest or profit to the owners, but have resulted in the upbuilding of agricultural communities, towns, and industries which in the aggregate have added millions of dollars to the Commonwealth.

Profits of farmer.—Going more definitely into the question as to whether irrigation will pay, we come to the fundamental proposition as to whether the profits of the irrigation farmer are such as to enable him to make the necessary payments for the cost of the irrigation works. We have assumed in the past that his profits have been large and that as a matter of course he could and would make the payments which enable profitable construction of irrigation works. It has been considered as preposterous to doubt his ability, but of late, especially in connection with Government works, there have been loud protests of his inability.

The studies made of the condition of the farmers by the Department of Agriculture, through its Bureau of Farm Management, of investments and returns from typical farms and of the census figures have revealed certain unexpected conditions. The results verify the somewhat disappointing conclusion that the average farmer under irrigation is obtaining only about 5 per cent on his investment and ordinary day laborer's wages. In other words, if irrigation is to succeed we must have farmers whose skill and equipment is such that they can earn far more than the average irrigator. It is this fact of the small average earnings which has kept back progress in further irrigation work. We can argue all around this and show that for one project or another there were faulty designs or unscrupulous promoters, but when we start on any constructive discussion

we must establish beyond doubt the fundamental fact as to actual earnings of the irrigators and the probability that these can and will be increased.

The reasons why the average farmer has not obtained larger returns are not far to seek. They lie primarily in the fact that irrigation development means pioneering and the meeting of unknown conditions. Many years may be necessary in subduing the soil and discovering what crops are best adapted to the peculiar climatic conditions. None of these important details can be safely predicted. Moreover, market conditions in a new country are to be established and these are unstable; the crop which one year is profitable may next year be not worth removing from the fields. The farmers themselves, coming from all parts of the world, are strangers. With ignorance of each others' peculiarities they are naturally suspicious and distrustful. Years are required to bring about effective cooperation even in the most obvious matters.

There exist in the newly developed communities none of the conditions which have made cooperative efforts or rural credits a success in the older countries where a whole neighborhood thinks and acts alike on most essentials and where each man knows intimately the affairs of his neighbor and of his father and grandfather before him and can safely predict what will take place under a range of known and proved conditions. Ultimately, we may expect a development such that the irrigation community will act as a unit, but many years must elapse during which individual farmers must struggle, each learning for himself the lesson of the need of cooperative effort.

The trouble with many of the irrigation schemes of the West is not so much a lack of skill on the part of the farmer, although this has often been an important factor. The cause lies rather in the wrong ideas about the types of farming that are feasible under the conditions which prevail locally. This has naturally led to wrong ideas about the size of farm necessary for economic success, and the same mistake has led to an inflation of land prices.

We must have more complete knowledge concerning the successful irrigators and also develop that individual and community frugality and self help, such as has pushed into the front rank the agricultural efforts of Denmark, where the discouragements of poverty and disaster have served only to eliminate the weaklings and to develop methods and results far surpassing those of lands more highly favored by nature.

How to revive.—The first reply to the question of how to revive irrigation development is to the effect that public money or credit should be used to subsidize or bring about some more or less direct form of subvention. This is the quick and easy solution nowadays offered to every big economic problem whether of agriculture, mining,

or transportation. Whenever any one of these or any allied industry of broad public importance begins to languish, the panacea is to get the great intangible public to pay the bill for the reason that the public may be the beneficiary. This is true of irrigation development. As shown above, the investor puts in a million dollars, causes the creation of several million dollars of values which go to the immediately surrounding community and to everyone except himself. He loses generally the interest on his investment and may consider himself lucky if he gets back even a part of the original outlay. If the public is benefited why should not the public pay for the benefit?

Irrigation district.—There is, however, an intermediate course and one by which it has been found practicable to put the cost more directly upon the immediate community benefited. This is through the formation of irrigation districts, public corporations, or municipalities having the power of self taxation and the ability to distribute the profits or losses with a more near approach to equity than through almost any other scheme of financing. The irrigation district, which should embrace all of the property benefited, can levy taxes for the construction, operation, and maintenance of the works and collect these through the well-tried channels of handling public funds, such as have been developed through centuries of experience.

The irrigation district can also assume heavy debts or obligations and under favorable conditions, borrow some of the money adequate for the construction of large works, this money being loaned on the security of all of the property in the district plus the additional security which will be created by the safe investment of the money thus borrowed.

The district plan, however, presents one unfavorable feature which the law or regulation must not fail to recognize, viz, that the population of these districts is a rural population. Few of the settlers have had any extended experience in business enterprises or in affairs of any large moment. There must be some advisory or supervisory tribunal outside the district that will pass upon the general features of the enterprise, including the issuance and sale of the bonds or other ways of raising the money, and that will see that the necessary annual tax is levied and collected to meet the interest and maturing principal.

By way of illustration may be cited the case of an irrigation district which several years ago voted over \$7,000,000 of bonds for the construction of the necessary irrigation works for reclaiming the lands in the district. The voters in that district consist largely, if not entirely, of people who are quite poor and who settled upon the land because it was free. They did not have the money to purchase land or the means to leave after they had settled and found that water could not be secured for the irrigation of their lands. The only

thing that saved the country from having another large irrigation failure was the fact that the bonds could not be sold.

It is simply ridiculous to assume that an enterprise requiring that large amount of money should be passed upon and financed by people without business experience. It shows how serious mistakes may result through the district plan unless there is some tribunal with business experience that may act in an advisory or supervisory capacity in financing and handling the funds of the district.

The State laws should provide that the taxes levied by irrigation districts shall be collected by the county tax collector as other State, county, and municipal taxes, instead of by the district collector, as the law now provides in some States. They should provide, further, that if for any reason the board of directors of the district fail or neglect to levy the necessary tax to meet the maturing interest or principal of bonds the board of county commissioners shall levy the same. This safeguard is necessary both from the standpoint of the Government in districts having Federal obligations or contracts upon which payments must be made, as well as necessary to protect the investing public who purchase bonds.

In working out any ideal scheme it is necessary, however, that there be some real value in the irrigation district. It is obvious that if it consists simply of undeveloped land and untried plans the mere formation of a district and formulation of these plans affords no real security. Here has been the rock upon which have been wrecked many hopes of development. In the early days of the irrigation district the necessary safeguards were not known nor observed, and millions of dollars in stocks and bonds were issued against undeveloped land which was to be rendered highly valuable. The fact, however, that great losses have been incurred is not necessarily a proof that the system, with adequate checks and safeguards, can not be made to succeed. We now have the benefit of a wide experience, one which instead of discouraging tends to encourage the belief that success can be attained along this line.

The safeguards which it is now proposed to throw about the irrigation district, and which will enable the good features to be developed without incurring the dangers of the past, lie along the line of publicity or public supervision and regulation. It is urged that the State or National authorities, with larger viewpoint and with skilled and competent men at hand, are now in a position to pass upon the various schemes for engineering and financing the irrigation districts, and by proper use of the facilities at hand the public authorities can put their stamp of approval or disapproval upon the plans. If satisfactory the irrigation district may then proceed to carry out the development with reasonable assurance on the part of the taxpayers and of the investing public that the scheme is desirable and feasible.

Guaranteeing the district.—Because of the discredit which has attached to irrigation securities, the proposition has been made that a further step be taken beyond mere public supervision, namely, that to insure public confidence the State or Nation, acting through legislative authority, should underwrite the securities or at least guarantee the payment of a low rate of interest, say, 4 per cent. One suggestion is that this should be done by the Federal Government, using for this purpose the reclamation fund or rather the security created by the investment of this fund. A modification of this is that the State should join and the State and National authorities each assume one-half of the risk. The argument for this latter proposition is that the State, having more immediate knowledge and interest in the enterprise and certain duties in connection with the water supply, should make use of its facilities for aiding in the work. There would also be far less tendency to urge questionable schemes upon the Federal authorities if the State had its share of the responsibility.

Subvention.—From careful consideration given to the subject if it now appears that the revival of many important irrigation projects can come only through some form of subvention or aid rendered by the Government in the form of a bonus or guaranty, then this fact should be clearly developed and convincing arguments given by which the needs and benefits may be clearly shown. It is to be noted in this connection that the reclamation act offers a most important precedent in that the Government furnishes the money without profit and without interest. If there should be figured as a contribution by the Government an interest of 3 or 4 per cent earned but not collected, it will be seen that this gift is a very substantial one.

Duty of State.—While there has been much discussion of State rights and contention over control of interstate waters, there has been relatively little thought given to the duty of each State in affording necessary protection to the water rights which have been acquired and in limiting these to beneficial use. Even less consideration has been given to the protection of the investor in irrigation works. In fact, the attitude as seen by the eastern man is apparently that of attempting to attract the investor, and then, when his money is spent, neglecting to afford him the protection which will insure the safe return of the money. As a consequence of the failure of State officials, notably some of the State land boards, to accept their responsibilities, the investors in general have become wary of having further dealings in such matters.

On this point Mr. Oliver O. Haga, in his admirable address on "Needed Legislation for Development of the Water Resources of the State," says: "The State owes a duty both to the man on the land and to the nonresident investor, and it should realize its full respon-

sibility to each. * * * Until drastic action is taken by the State the confidence of the investing public in irrigation securities could not be restored. The law should assume that the investor follows the rule of 'safety first.'"

Conclusions.—The revival of irrigation will come largely as a steady normal growth of good business practice such as underlies all successful industry. No one single act can bring about such revival, but rather the working together of a number of factors which may be summed up as follows:

First. The irrigators now on the ground must make good to a larger degree and demonstrate to the world their ability to produce higher average crop values, increasing the net return per family.

Second. More good farmers must be had to utilize the land which has already been reclaimed.

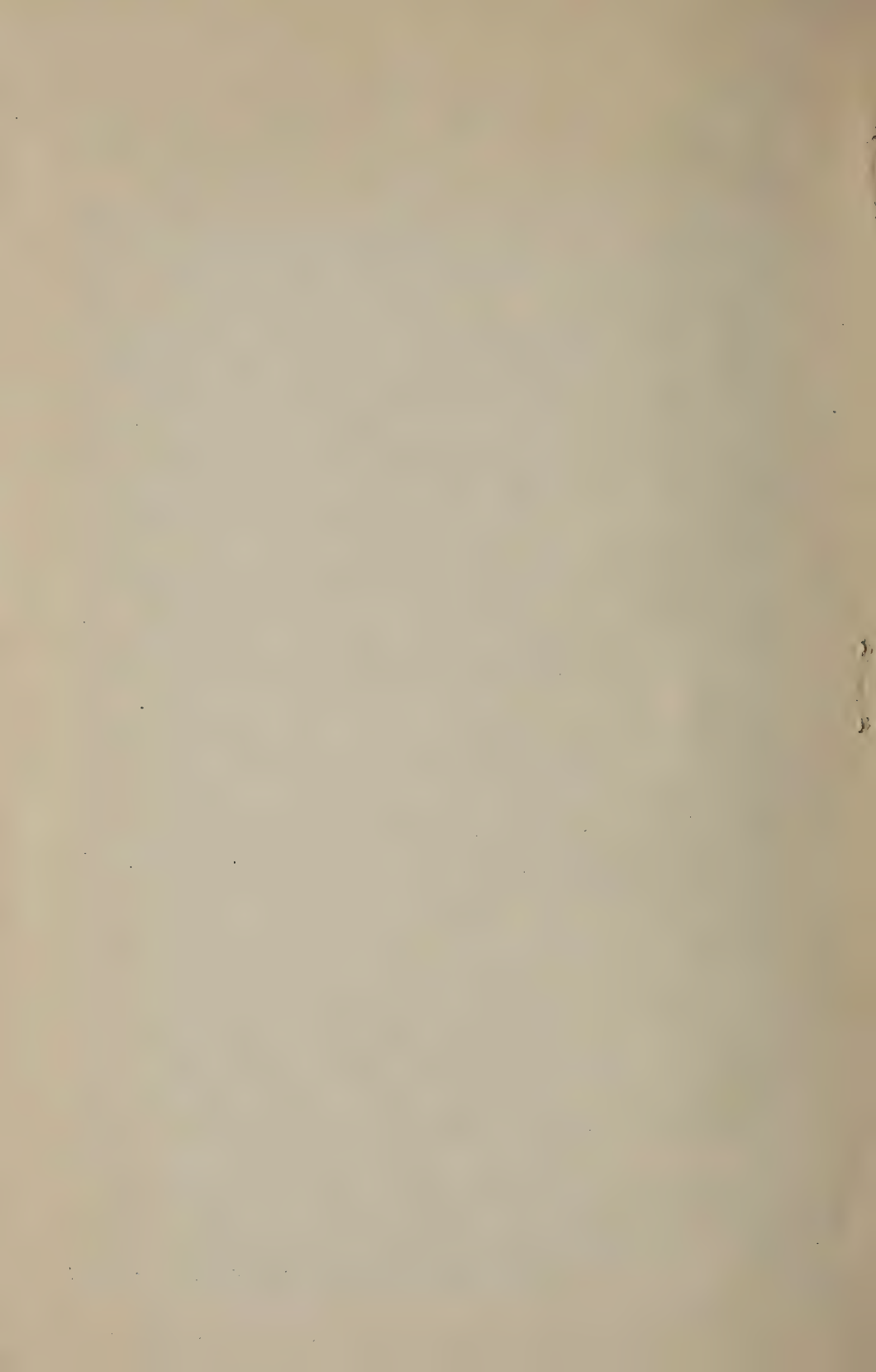
Third. Cooperation must be developed not only in handling the crops and products to obtain better prices, but also in the selection of the kind of crops to plant and in purchasing supplies and reducing the cost of farming operations.

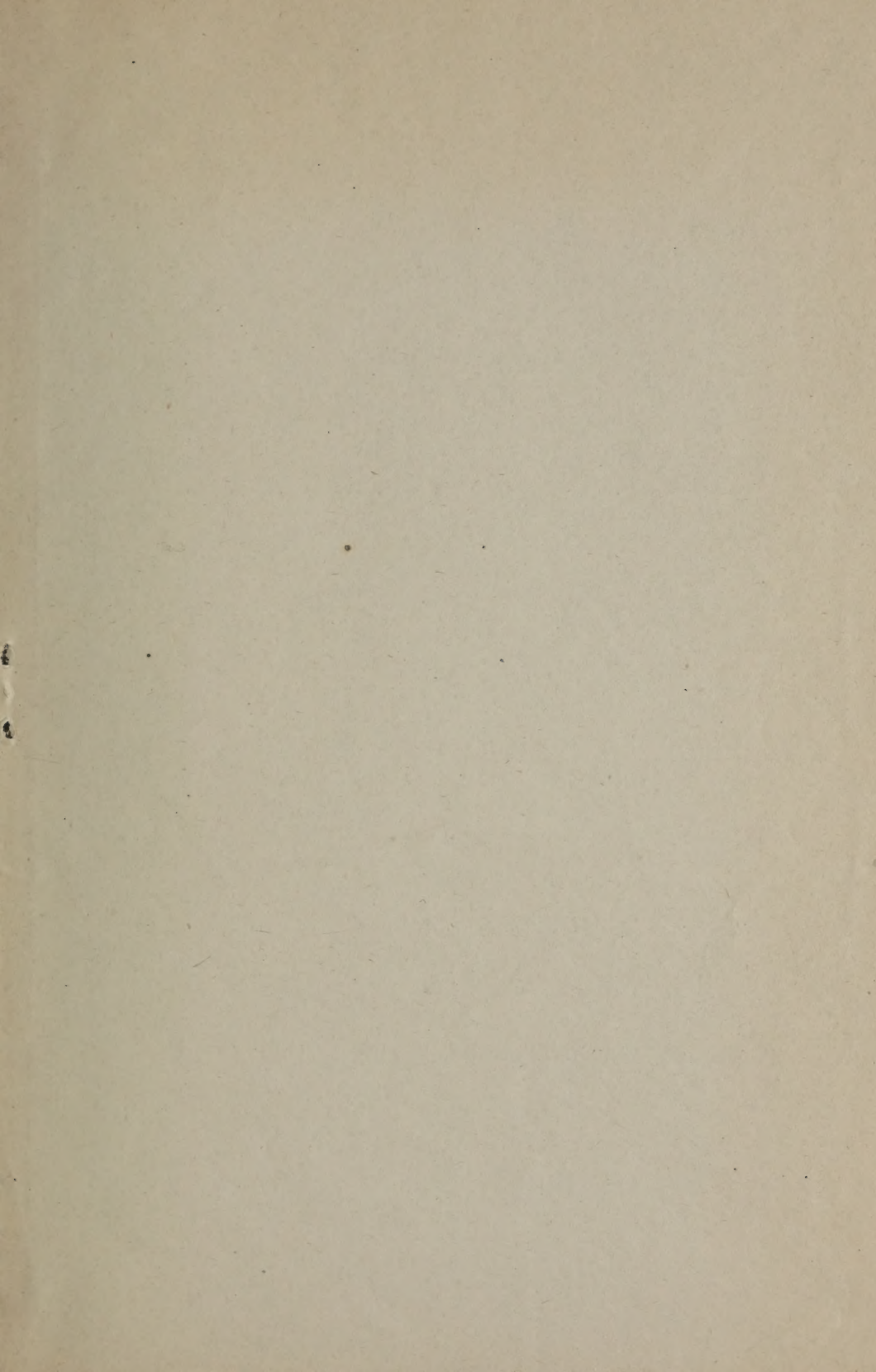
Fourth. Better credit must be established through cooperative effort and lower interest rates secured based largely on mutual confidence and support as well as upon better financial system.

Fifth. The State must do its part not only in protecting the water rights of the farmers, but in safeguarding the investments already made.

Sixth. The irrigation district laws and similar enactments should be unified in the various States, strengthened, and improved, so as to make them more effective.

Seventh. The Federal Government in cooperation with the State and acting through effective irrigation districts or similar organizations should aid in the procuring of additional capital for new and meritorious undertakings.





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